INTERNATIONAL CONFERENCE ON HIGH ENERGY PHYSICS
AMSTERDAM 2002

Abstract ID=ABS484
Hadron spectroscopy and exotics (experiment and theory)
QCD: Soft interactions
Experiment: L3 Collaboration
Contact Person: Juan Alcaraz
Institute: CERN
Email: Juan.Alcaraz@cern.ch

Light Resonances in $K^0_S K^\pm \pi^\mp$ and $\eta\pi^+\pi^-$ final states in $\gamma\gamma$ collisions at LEP

L3 Collaboration

Abstract

The $e^+e^- \to e^+e^- K^0_s K^\pm \pi^\mp$ and $e^+e^- \to e^+e^- \eta\pi^+\pi^-$ final states are studied with the L3 detector at LEP using data collected at centre–of–mass energies from 183 GeV up to 202 GeV. The mass spectrum of the $K^0_s K^\pm \pi^\mp$ final state shows an enhancement around 1470 MeV, which is identified with the pseudoscalar meson $\eta(1440)$.This state is observed in $\gamma\gamma$ collisions for the first time and its two–photon width is measured to be $\Gamma_{\gamma\gamma}\Big(\eta(1440)\Big) \times \mathrm{BR}\Big(\eta(1440) \to \mathrm{K\bar{K}}\pi\Big) = 212 \pm 50(\mathrm{stat}) \pm 23(\mathrm{sys})$ eV. Clear evidence is also obtained for the formation of the axial vector mesons $\mathrm{f}_1(1420)$ and $\mathrm{f}_1(1285)$. In the $\eta\pi^+\pi^-$ channel the $\mathrm{f}_1(1285)$ is observed, and upper limits for the formation of $\eta(1440)$ and $\eta(1295)$ are obtained.

Version 1
Date 2002-04-30 : 14:08:54'